CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

TENTATIVE MONITORING AND REPORTING PROGRAM
NO. R9-2009-0004
FOR THE
GREGORY CANYON LANDFILL
SAN DIEGO COUNTY

A. MONITORING PROVISIONS

1. All analyses shall be performed in a laboratory certified to perform such analyses by the California Department of Public Health or a laboratory approved by the California Regional Water Quality Control Board, San Diego Region (Regional Board). Specific methods of analysis must be identified. If methods other than U.S. Environmental Protection Agency (USEPA) approved methods or Standard Methods are used, the exact methodology must be submitted for review and must be approved by the Regional Board prior to use. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Regional Board.

2. If the Discharger monitors any waste constituents more frequently than required by this Monitoring and Reporting Program (M&RP), using the most recent version of standard USEPA Methods, or as specified in this M&RP, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the Discharger's monitoring report. The increased frequency of monitoring shall also be reported.

3. The Discharger shall report all instances of noncompliance not reported under **Reporting Requirement I.8, I.9, I.10, I.11, and I.12** of Order No. R9-2009-004 at the time monitoring reports are submitted. The reports shall contain the information listed in **Reporting Requirement I.9** of Order No. R9-2009-004.

4. Sample collection, storage, and analysis shall be performed according to the applicable protocols included in the USEPA, *SW-846: Test Methods for Evaluating Solid Wastes Physical/Chemical Methods* (Version 6, dated November 2004) and Title 40, Code of Federal Regulations (CFR), Part 136, *Guidelines Establishing Test Procedures for Analysis of Pollutants Under the Clean Water Act* and in accordance with an approved sampling and analysis plan.

5. All monitoring instruments and equipment shall be properly calibrated and maintained as necessary to ensure accuracy of measurements.

6. The Discharger shall retain paper copies of records for all monitoring information, including all calibration and maintenance records and copies of all

reports required by this Order. These records shall be maintained for a minimum of **five years** from the date of the sample, measurement, report or application; with the following exceptions:

a. The operating record shall permanently retain notifications issued pursuant to 40 CFR §258.10(b) and §258.55(g)(1)(iii), and/or California Code of Regulations (CCR) Title 27 §20420(j)(2).

b. This record retention period has not been extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Board.

c. At the beginning of the post-closure maintenance period, the Discharger shall provide the Regional Board with copies of all records concerning the volumes and types of each waste discharged at each Unit, and the manner and location of the discharge [pursuant to CCR Title 27 §21720(f)].

7. Records of monitoring information shall include:

a. The date, identity of sample, Monitoring Point from which it was collected, and time of sampling or measurement;

b. The individual(s) who performed the sampling or measurements, chain-of-custody documentation;

c. Date and time that analyses were started and completed, and the name of the personnel performing each analysis;

d. The analytical techniques or method used, including method of preserving the sample and the identity and volumes of reagents used;

e. Calculation of results;

f. Results of analyses, the method detection limit (**MDL**) and the practical quantitation limit (**PQL**) for each parameter;

g. Laboratory quality assurance (*e.g.,* percent recovery and response factor) and quality control results; and

h. Legible records of the volume and type of each waste discharged at each Unit and the manner and location of the discharge. Such records shall be on forms approved by the SWRCB or Regional Board and shall be maintained at the waste management facility until the beginning of the post-closure period.

8. The monitoring reports shall be signed by an authorized person as required by **Reporting Requirement I.18.c** of Order No. R9-2009-004.

9. The Discharger shall ensure that the laboratory analysis of all samples collected from Compliance Monitoring Points are consistent with the following conditions:

   a. The methods of analysis and the detection limits used shall be appropriate for the expected concentrations. For detection monitoring of any constituent or parameter that is found in concentrations which produce more than 90 percent non-numerical determinations (*i.e.*, "trace" or "ND") in data from each Monitoring Point for that medium, the analytical method having the lowest method detection limit (MDL) shall be selected from among those methods which would provide valid results in light of any matrix effects involved;

   b. Analytical results between the MDL and the PQL shall be reported as "trace" and shall by accompanied both by the (nominal or estimated) MDL and PQL values for that analytical run;

   c. The laboratory shall derive MDLs and PQLs for each analytical procedure, according to State of California laboratory accreditation procedures. These nominal MDLs and PQLs shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the lab, rather than simply being quoted from USEPA analytical method manuals;

   d. If the lab suspects that, due to a change in matrix or other effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from the laboratory-derived nominal MDL/PQL values, the results shall be flagged accordingly, along with estimates of the detection limit and quantitation limit actually achieved. The MDL shall always be calculated such that it represents a concentration associated with a 99 percent reliability of a non-zero result. The PQL shall always be calculated such that it represents the lowest constituent concentration at which a numerical value can be assigned with reasonable certainty that it represents the constituent's actual concentration in the sample;

   e. All Quality Assurance/Quality Control (**QA/QC**) data shall be reported, along with the sample results to which it applies, including the method, equipment, and analytical detection and quantitation limits, the recovery rates, an explanation for any recovery rate that is less than 80%, the results of equipment and method blanks, the results of spiked and surrogate samples, the frequency of quality control analysis, and the name and quantification of the person(s) performing the analyses. Sample results shall be reported unadjusted for blank results or spike

recovery. In cases where contaminants are detected in QA/QC samples *(i.e.,* field, trip or lab blanks), the accompanying sample results shall be appropriately flagged;

f. Upon receiving written concurrence from the Regional Board, an alternative statistical or non-statistical procedure may be used for determining the contaminant (*e.g.*, methylene chloride, acetone, diethylhexyl phthalate, and di-n-octyl phthalate) during any given Reporting Period in which QA/QC samples show evidence of laboratory contamination for that constituent. Nevertheless, analytical results involving detection of these analytes in any background or downgradient sample shall be reported and flagged for easy reference by the Regional Board;

g. Unidentified peaks on chromatograms shall be reported, along with an estimate of the concentration of the unknown analyte. When unidentified peaks are encountered on chromatograms, second column or second method confirmation procedures shall be performed to attempt to identify and more accurately quantify the unknown analyte; and

h. The MDL and PQL shall be determined in accordance with the definitions of those terms in the **CCR** Title 27. In the event that a Monitoring Parameter (**MPar**)'s MDL and or PQL change, the Discharger shall highlight the change in the laboratory report's summary and the report shall also include an explanation for the change that is written and signed by the owner of the analytical laboratory.

10. A list containing definitions of terms and acronyms are contained in **Appendix A** attached to this Monitoring and Reporting Program (**M&RP**).

11. The Discharger shall submit any reports required by this Order electronically, in accordance with CCR Title 23, Division 3 §3890 *et. seq*. The Discharger shall also continue to provide complete paper copies of all required reports to this Regional Board.

12. The Discharger shall upload a complete copy of all reports in PDF format into the SWRCB's on-line database (currently Geotracker), which provides the public with on-line access to environmental data. The electronic copy is intended to be used for all public information requests, regulatory review, and compliance /enforcement activities.

B. DETECTION MONITORING PROGRAM

1. The groundwater monitoring network for the waste management unit (WMU) includes background wells (GLA-4, GLA-5, GLA-11 and GLA-18) and compliance wells (GMW-1, GLA-2, GLA-12, GLA-13, GLA-14, GLA-A, GLA-B, GLA-C, GLA-D, GLA-E, GLA-F and GLA-G) for the fractured bedrock aquifer. For the alluvial aquifer, the background well is Lucio #2R; compliance wells are GMW-3 and the sentry wells are GLA-16 and SLRMWD #34R. The locations of all of these groundwater monitoring wells are shown on **Attachment No. 1** to this M&RP.

2. Water samples shall be collected, analyzed, and results reported for constituents shown in the following table:

MONITORING PARAMETERS	UNITS	SAMPLING FREQUENCY
PH	pH	Quarterly
Total Dissolved Solids (TDS)	mg/l	Quarterly
Chloride	mg/l	Quarterly
Sulfate	mg/l	Quarterly
Nitrate as Nitrogen	mg/l	Quarterly
Calcium	mg/l	Quarterly
Magnesium	mg/l	Quarterly
Sodium	mg/l	Quarterly
Appendix II Constituents [1]	µg/l	Quarterly

Note: mg/l = milligrams/liter and µg/l = micrograms/liter

[1] Appendix II to 40 CFR 258 and any other constituents subsequently amended to the MPar List per ***Detection Monitoring Program B.12, Detection Monitoring Specifications C.4, C.5, C.7 and/or C.8*** of this Monitoring and Reporting Program.

3. The Discharger shall establish and maintain groundwater wells at the WMU site to be used as part of the water quality monitoring program.

4. Prior to purging monitoring wells for purposes of groundwater sampling, the static water level shall be measured in each well. The Discharger shall determine groundwater flow rate and direction **at least quarterly**, including the times of expected highest and lowest elevations of the water level for the respective groundwater body. Groundwater elevations for all compliance wells in a given aquifer shall be measured within a period of time short enough to avoid temporal variations in groundwater. This information shall be included in the semi-annual monitoring reports.

5. For any given medium, samples shall be collected (1) from all Compliance Monitoring Points to satisfy the data analysis requirements for a given Reporting Period; (2) during the latter third of the Reporting Period within a span not exceeding **30 days**; and (3) in a manner that ensures sample independence to the greatest extent feasible. Sample procurement shall be carried out as late in the Reporting Period as feasible, considering the time needed to analyze the samples, analyze the resulting data, and to prepare and submit the monitoring report within **30 days** after the end of the Reporting Period.

6. Prior to sampling monitoring wells, the presence of a floating immiscible layer in all wells shall be evaluated at the beginning of each sampling event. This shall be done prior to any other activity that may disturb the surface of the water in a well, *e.g.,* water level measurements. If an immiscible layer is found, the Discharger shall notify the Regional Board by telephone and facsimile within **24 hours**.

7. Groundwater sampling shall include an accurate determination of the groundwater surface elevation and field parameters (temperature, electrical conductivity and turbidity) for each Compliance Point [CCR Title 27 §20415(e)(13)].

8. Surface Water Monitoring

   Surface water monitoring shall be conducted in compliance with general monitoring requirements specified in CCR Title 27 §20415(c)(1) through (2)(B). Surface water monitoring shall be conducted **quarterly** at SLRSW-1 (upgradient) and sampling stations SLRSW-2 and GCSW-2 (downgradient) (when there is sufficient water to collect a sample). Surface water samples shall be analyzed for all the monitoring parameters specified in ***Detection Monitoring Program B.2***. The locations of these sampling points are shown on **Attachment No. 1** to this M&RP.

9. Secondary Leachate Collection and Removal System (LCRS): Leak Detection Monitoring

   Once the WMU is in operation and the secondary LCRS is generating liquid, the liquid in the sump shall be monitored (with a properly calibrated electric probe for pH and electric conductivity to monitor for changes that indicate the liquid is leachate as opposed to rainwater or construction water) [**weekly until leachate is indicated**] (also metered during pumping). The Discharger shall ensure that all liquid removed from the secondary LCRS is properly managed and disposed in compliance with all applicable federal, state and local requirements.

   a. Once the liquid in the secondary LCRS sump is established as leachate:

i. The Discharger shall notify the Regional Board **within three days** that liquid was first observed.

ii. The Discharger shall implement the same monitoring and reporting for leachate constituents, CFR Title 40, Part 258 Appendix II constituents and methyl tertiary butyl ether (MTBE), as required for leachate samples collected from the primary LCRS in **Detection Monitoring Program B.11**.

b. The Discharger shall implement the following requirements for management of landfill gas in the secondary LCRS:

i. Vapor pressure, methane, carbon dioxide and oxygen shall be monitored at no less than three locations in the secondary LCRS piping [**weekly**].

ii. If landfill gas is detected in the secondary LCRS, vapor samples will be collected in a SUMMA canister and analyzed for volatile constituents using USEPA Method TO-14 [quarterly].

iii. Pressure changes in the secondary LCRS will be monitored every 3 minutes for the first 3 hours that landfill gas is extracted from the primary LCRS.

iv. Results from management of landfill gas in the secondary LCRS shall be summarized, tabulated and discussed in each semi-annual monitoring report.

10. Subdrain Monitoring

If the secondary LCRS is determined to contain liquid leachate, or waste constituents in vapor/gas samples collected from the secondary LCRS, then the subdrain shall be monitored **quarterly** for the same constituents of concern (COCs) developed from the procedures listed in **Detection Monitoring Program Section B.11**. If sampling results indicate the possibility of a release from the landfill, the Discharger shall conduct a retest to determine the presence of any waste constituent(s). If the Discharger determines that a release from the landfill has occurred, the Discharger shall notify the Regional Board by telephone, e-mail, or FAX within **24 hours** and submit a written report within **5 days** of determination, and shall immediately begin carrying out the applicable general requirements for **Response to a Release D.1.**

11. Primary Leachate Collection and Removal System (LCRS) Monitoring

Once the WMU is in operation and the primary LCRS is generating liquid, the liquid in the sump shall be monitored (with a properly calibrated electric probe for pH and electric conductivity to monitor for changes that indicate the liquid is leachate as opposed to rainwater or construction water) [**weekly until leachate is indicated**].

Once the liquid in the primary LCRS is established to be leachate, the following leachate monitoring and reporting requirements shall apply:

a. Every **October,** the Discharger shall sample the leachate from the LCRS tank and analyze the sample for Appendix II constituents and MTBE. The Discharger shall continue to monitor for Appendix II constituents and MTBE until a COC list for the WMU has been developed. The analytes shall consist of each constituent listed in Appendix II, and MTBE, and shall be added to the COC list if it is both:

i. Detected in a sample of the landfill's leachate.

The Discharger shall submit the analytical results to the Regional Board by **January 31**, including identification of all detected Appendix II constituents and MTBE, that are not currently on the COC list (non-COCs); and

ii. Also detected in a retest leachate sample collected the following **April.**

The Discharger shall submit a report to the Regional Board by **August 1**. This report must identify all constituents that were detected in both the previous calendar year's October sample and in the April retest sample. The report shall also include an updated COC list that includes the Appendix II constituents that are newly detected in both the **October** and **April** leachate samples. If a volatile organic constituent has been detected and verified in leachate, the constituent shall be added to the MPar list. In addition, the revised COC list must be noted in the operating record within **14 days**, permanently add these constituents to the Unit's COC list. The report shall also include an updated COC list that includes the Appendix II constituents and MTBE that are newly detected in both the **October** and **April** leachate samples. Within **seven days** of amending the Facility's Operating Record pursuant to this section, the Discharger shall also provide written notification to the Regional Board indicating that they have made the amendment.

b. For each Appendix II constituent, and MTBE, that is added to the Unit's COC list (as described above), the Discharger shall establish a reference background value in groundwater following the procedures required in ***Detection Monitoring Specifications C.4.*** Once this reference set of background data is collected, the Discharger shall include it as a separate item in the next monitoring report submittal.

c. The Discharger shall implement the following requirements for management of landfill gas in the primary LCRS:

i. Vapor pressure, methane, carbon dioxide and oxygen shall be monitored at no less than three locations in the primary LCRS piping [**weekly**]. The presence of landfill gas in the LCRS requires that the Discharger startup a regularly scheduled effort to extract landfill gas from the primary LCRS. The specific procedures and schedule for implementing extraction of landfill gas from the primary LCRS shall be discussed and summarized in the semi-annual reports.

ii. Vapor pressure shall be monitored in a series of pressure probes placed in the primary LCRS material on the side slopes to determine intrinsic permeability and measure vacuum levels [**weekly**].

iii. Collected data and results from management of landfill gas from the primary LCRS shall be summarized, tabulated and discussed in each semi-annual monitoring report.

12. Report of Results from Five-Yearly COC Scan

The Discharger shall monitor all **COCs** and submit a report (**COC Report**) as follows:

a. The Discharger shall sample all Monitoring Points and Background Monitoring Points for each monitored medium for all **COCs every fifth year**, beginning with the year the WMU accepts waste, with subsequent COC monitoring efforts being carried **out every fifth year thereafter** alternately in the **Fall** (**Reporting Period ends September 30**) and **Spring (Reporting Period ends March 30)**. The COC Report may be combined with any Semi-annual Monitoring Report or Annual Summary Report [required under **J. Reporting Schedule** of this M&RP] having a Reporting Period that ends at the same time. The COC Report shall meet the minimum requirements of **H. Reports to be Filed with the Regional Board** of this M&RP.

i. A minimum of one sample from each background and compliance monitoring well must be collected and analyzed during each COC scanning event. If a COC is detected (including trace value) that is not yet on the MPar list, the Discharger shall, within **30 days**, resample collecting a single sample from the indicating well(s) and analyze it only for the newly-detected constituent(s).

ii. Any COC detected in samples collected from a groundwater monitoring well, and verified by a retest, automatically becomes part of the MPar list for the facility. The Discharger shall notify the Regional Board of any such change **within 3 days**, via phone, facsimile, or e-mail, shall add the newly detected constituents to the facility's MPar list, and shall note prominently the constituent(s) added to the MPar list in the next scheduled monitoring report, along with a listing of which well(s) were involved in this detection and verification. In addition, the updated MPar list must be noted in the Facility's Operating Record within **14 days** of verification, permanently adding these constituents to the landfill's MPar list. Within **seven days** of amending the Facility's Operating Record pursuant to this section, the Discharger shall also provide written notification to the Regional Board indicating that they have made the amendment.

13. Site Inspections

a. At a minimum, a site inspection shall be conducted **quarterly** and include an evaluation of all waste containment structures and monitoring systems including, but not limited to, the landfill gas collection system, condensate and leachate containment structures, sumps, monitoring wells, and run-on and runoff drainage control structures. The inspection reports shall contain information on the site condition and a discussion of any significant observations with regard to:

i. General site condition;
ii. The condition of the cover system including the top deck, intermediate benches and side slopes;
iii. The effectiveness of the run on/run off control facilities;
iv. The effectiveness of erosion control BMPs;
v. The effectiveness of the leachate control facilities;
vi. The water quality monitoring networks, including the leak detection/drainage layer sampling sump;
vii. The landfill gas monitoring and control system(s);
viii. Maintenance activities performed at the site; and
ix. Condition of temporary soil stockpiles/borrow areas at the site.

b. All deficiencies shall be identified, and photographed and shall be recorded in a permanent log.

c. The monthly total volume of leachate liquid [CCR Title 27 §20340(h)] collected from each containment structure shall be recorded **quarterly**.

d. The WMU shall be evaluated to determine its effectiveness in complying with this Order.

e. During dry weather conditions, the effectiveness of the drainage control system shall be evaluated on the basis of its conformance to the as-built drawings, or revisions thereto, for the system.

f. The quarterly inspection reports shall be included with the next semi-annual monitoring report.

14. Waste Placement

The Discharger shall submit a waste placement map with the semiannual report. The map shall show where waste has been disposed of since the previous monitoring report was submitted. The Discharger shall also state the quantities and types or waste disposed at the WMU since the last monitoring report was submitted.

C. DETECTION MONITORING SPECIFICATIONS

1. The Discharger shall comply with the requirements of CCR Title 27 §20415 for any water quality monitoring program developed to satisfy CCR Title 27 §20420 and the requirements of this Order.

a. The groundwater monitoring shall meet the applicable requirements of CCR Title 27 §20415 and 40 CFR §258.51(a, c, and d);

b. The surface water quality monitoring program shall meet the requirements of CCR Title 27 §20415(c) and shall be conducted in accordance with ***Detection Monitoring Program B.8.*** In addition, whenever possible, the Discharger shall measure volumetric flow – or, at a minimum, visually estimate the flow rate – for all surface water monitoring points with flowing water.

c. All monitoring and data analysis shall be in accordance with the general monitoring requirements of CCR Title 27 §20415(e) or other options as provided in this Order.

d. The Discharger shall conduct water quality monitoring at the WMU in accordance with CCR Title 27 §20420 (Detection Monitoring Program,

or DMP), 40 CFR §258.54 (DMP), and Detection Monitoring Specifications pursuant to this Order.

e. The Discharger shall not field filter groundwater samples prior to laboratory analysis in accordance with CFR 40 §258.53(b).

f. The Discharger shall notify the Regional Board in writing within **seven days** after the WMU begins to generate leachate and provide the date when they will initiate the annual leachate monitoring requirements of this Order.

2. Water Quality Protection Standard

The five parts of the Water Quality Protection Standard [Standard] of CCR Title 27 §20390 are as follows:

a. Constituents of Concern (COC) [CCR Title 27 §20395]

The Constituents of Concern list will be generated based upon leachate monitoring results (***Detection Monitoring Program B.11*** of this M&RP). Under this M&RP, statistical and non-statistical data analysis is limited to those COCs that are on the current MPar list by virtue of their being present in detectable levels in groundwater.

b. Concentration Limits [CCR Title 27 §20400]

The concentration limit for any given well/MPar pair is its applicable background data set, as determined or updated pursuant to ***Detection* Monitoring Specifications C.5 or C.7** of this M&RP.

c. POC & Monitoring Wells [CCR Title 27 §20405]

The point of compliance (POC) and compliance wells are shown in **Attachment No. 1** to this M&RP.

d. Monitoring Points and Background Monitoring Points for Detection Monitoring [CCR Title 27 §20405]

The Monitoring Points for the WMU are identified in ***Detection Monitoring Program B.1*** of this M&RP. These monitoring points are also shown on **Attachment No. 1** to this M&RP.

e. Compliance Period [CCR Title 27 §20410]

The minimum compliance period for the WMU is 32 years. However, the landfill post-closure maintenance period shall continue until the Regional Board determines that remaining wastes in all waste

management units (WMUs) will not threaten water quality [CCR Title 27 §20950(a)(1)] and **Closure and Post-Closure Specification G.5** of this Order.

3. The Regional Board may consider alternative monitoring parameters that meet the requirements of both CCR Title 27 §20380 *et seq.*, and 40 CFR §258.54. The Regional Board may also consider alternative statistical or non-statistical methods that meet the requirements of CCR Title 27 §20415(e) and 40 CFR §258.53.

4. Establishing Initial COC Data

   a. For any COC that does not have at least 16 data points at any given compliance well (*e.g.*, for a new COC established under ***Detection Monitoring Program B.11***), the Discharger shall establish the prevailing concentration of that constituent at each such data-deficient well by collecting and analyzing one sample quarterly at each data-deficient background and downgradient monitoring point until each such well has at least 16 data points.

   b. For any upgradient or downgradient well installed after the effective date of this M&RP, the Discharger shall establish the prevailing concentration for each COC by sampling **quarterly for four years**. These data shall be used, as described in ***Detection Monitoring Specification C.5 (a through c),*** in the event that the COC becomes an MPar. For any constituent for which quarterly sampling would be too frequent to obtain reasonably independent data, even using the post-sampling purge approach described in CCR Title 27 §20415(e)(12)(B), the Discharger shall include, for Regional Board approval, a proposed date for completion of data procurement and a well- and constituent-specific technical validation for any delay of more than one month between successive sampling dates.

5. Statistical Data Analysis Methodology

   a. Intra-well Comparisons are Standard – Except as otherwise provided in ***Detection Monitoring Specification C.5.a.i.3 (a & b),*** intra-well comparison methods shall be used at all compliance wells for all MPars that are subject to data analysis under this Order and shall be used to test individual "background" (*e.g.*, upgradient) wells regarding unexpected increases in man-made constituents (*e.g.*, VOCs) as follows:

      i. Pre-Detection Background Data Set – Initially, except as otherwise provided in ***Detection Monitoring Specification C.5.a.i(3)(a) and (b) or C.7,*** for each given MPar at a given downgradient monitoring well (well/MPar pair), the proposed

background data set shall consist of all validated data from that compliance well and parameter, for the period of four years after adoption of this Monitoring and Reporting Program. The Discharger shall collect quarterly samples for a period of four years. Then, every two years as part of the annual monitoring summary report [see CCR Title 27 §20415(e)(14)], the Discharger shall add data to the background data set for each well/MPar pair after validating (via a method approved by the Regional Board), that the new data does not contain results indicating an increase over the existing background data concentrations. The Discharger shall retire the well/MPar's oldest two years of background data (after 16 background data points have been collected), thereby producing a data set covering the then-previous four years (16 data points). The Discharger shall validate the proposed intra-well background data set as follows for each MPar at each well (initially) or, subsequently, at a new well or for a new MPar at an existing well. The Discharger shall report the validated or updated background data set, for each affected well/MPar pair, in the next scheduled monitoring report. Initial background data validation shall be as follows:

(1) Accelerated Background Data Procurement – if there are less than 16 pre-detection monitoring data points available, for a given MPar at any compliance well, the Discharger shall implement the accelerated data procurement effort described in ***Detection Monitoring Specification C.4*** to achieve that minimum background sample size (16 data points per well) prior to initiating the intra-well background data set validation procedure described below;

(2) Validate Upgradient Data for Synthetic MPars – for any MPar that is a non-metallic Appendix II constituent (*i.e.*, artificially produced or synthetic), the initial intra-well data validation, under ***Detection Monitoring Specification D.5.a.i(3),*** shall utilize only data from those upgradient (or cross-gradient) compliance wells whose pre-detection monitoring data, for that constituent, exceeds the constituent's method detection limit in less than 10 percent of the well's data. Such synthetic constituents should not be detectable at upgradient wells except in error (around 1 percent of the time) or because the constituent comes either from the WMU or from another source. For any upgradient well rejected pursuant to this paragraph, for a given MPar, where the Discharger has not already explained the constituent's presence at that well to the satisfaction of the Regional Board, the

Discharger shall conduct an investigation under ***Detection Monitoring Specification C.7***. If there are one or more rejected background wells, the Discharger shall use its data to validate each well/MPar pair's proposed intra-well background data set, under ***Detection Monitoring Specification C.5.a.i(3)***; and

(3) Intra-well Background Validation for New Well/MPar Pairs – for all compliance wells initially and, subsequently, for new wells or a new MPar at an existing well, to determine whether the existing data for that MPar at the well can be used as its intra-well comparison background data set:

(a) Commonly Quantified Constituents – for determining the "naturally occurring" or "background" groundwater conditions (*i.e.*, pre-landfill conditions) of any MPar that may commonly be detected in groundwater at concentrations exceeding the constituent's PQL, the Discharger shall validate the proposed intra-well data from each compliance well by comparing that well's data set to a pooled box-and-whiskers plot, for that particular MPar, from all "background" wells (*i.e.*, upgradient or cross-gradient wells) completed in the same water bearing zone of the groundwater aquifer. If any such constituent's median concentration (for a downgradient well) exceeds the pooled background plot's 75th percentile (the upper boundary of the box in a box-and-whisker's plot), then that compliance well's existing data cannot be used as the intra-well comparison background data set for that well/MPar pair. That well/MPar shall be tested, beginning no later than the next scheduled reporting period, using an inter-well comparison data analysis method [against the applicable background well(s)], that meets the requirements of CCR Title 27 §20415(e)(9). For wells/MPar pairs whose existing data's median is less than the pooled background plot's 75th percentile, the existing data shall be used as the initial background data set for intra-well comparisons for that well/MPar pair; or

(b) Rarely Quantified Constituents – for determining the "naturally occurring" or "background" groundwater conditions (*i.e.*, pre-landfill conditions) for an MPar that would rarely be detected in groundwater

(*e.g.*, non-metallic Appendix II constituents), the Discharger shall identify the highest value from the pooled data set from all background wells that have passed validation under ***Detection Monitoring Specification C.5.a.i(2)*** or, in a case where all applicable upgradient well data is non-detect, the MDL. The Discharger shall use this value as a basis of comparison to validate the data points in the proposed intra-well background data set. The initial intra-well background data set for that downgradient well shall consist of all data points in the proposed intra-well background data set that are less than this value.

ii. **Post-Detection Background Data Set —** For any constituent that is in "tracking mode" [***Detection Monitoring Program Specification C.5.e.ii***], at a given well, its background data set shall be the background data set that was in effect when the well/MPar pair exhibited a measurably significant increase.

b. Performance Standards – All data analysis methods (statistical or non-statistical) shall meet the applicable requirements of CCR Title 27 §20415(e)(9).

c. Retest is Part of the Method – If an approved data analysis method provides a preliminary indication that a given MPar has displayed a measurably statistically significant increase in concentration at a given well, then the Discharger shall perform a discrete retest, in accordance with CCR Title 27 §20415(e)(8)(E) for verification. The retest is part of the data analysis method; therefore, a measurably significant increase exists only if either or both of the retest samples validate the preliminary indication.

d. Limited Retest Scope – For any given groundwater monitoring point, the Discharger shall perform the verification procedure only for those MPars that have shown a measurably significant increase in that well for that reporting period.

e. Water Quality Monitoring Approach – The monitoring approach used for each well/MPar pair shall be controlled by whether the MPar has exhibited a measurably significant increase in that well. Therefore, the Discharger shall monitoring each well/MPar pair in one of two modes, as follows:

i. Detection Mode – For an MPar that has not produced a measurably significant increase at that well, the purpose of monitoring for that well/MPar pair is to watch for the MPar's

arrival at that well in a concentration that triggers a measurably significant indication of a release using an appropriate statistical or non-statistical data analysis method; or

ii. Tracking Mode - For an MPar that has produced a measurably significant increase at that well, the purpose of monitoring for that well/MPar pair is to track changes in the concentration of the MPar at that well via an evolving concentration-versus-time plot.

f. Detection Mode Data Analyses – The following applies to all detection mode data analyses (i.e., this paragraph does not apply to the scans required under ***Detection Monitoring Program B.11 and B.12***):

i. MPars Readily Detectable in Background – At any given monitoring point, the Discharger shall apply an approved statistical analysis for each detection mode MPar that exceeds its respective MDL in **10 percent or more** of the applicable background data set. For each well/MPar pair (separately), an approved statistical analysis is a method, other than Analysis of Variance (**ANOVA**), that meets the performance standards of CCR Title 27 §20415(e)(9). If using SANITAS®, the Discharger shall use the "CA Standards" and "CA Retest" settings. Otherwise:

(1) For any such well/MPar pair that, as of the effective date of this Order, does not have an approved statistical analysis method, the Discharger shall propose and substantiate an appropriate statistical method within **30 days** of the adoption of this Order;

(2) For any new MPar that qualifies for statistical analysis by meeting the above 10 percent rule at a given well, the Discharger shall propose and substantiate an appropriate statistical method for that well/MPar pair as part of the background data validation under ***Detection Monitoring Specification C.5.a.i.(3)***.

ii. MPars Not Readily Detectable in Background – For any monitoring point at which one or more MPars exceed their respective MDL in **less than 10 percent** of the applicable background data set, the Discharger shall analyze the data for these MPars via the California Non-statistical Data Analysis Method (CNSDAM) test described in ***Detection Monitoring Specification C.6.***

6. CALIFORNIA NON-STATISTICAL DATA ANALYSIS METHOD

a. Non-Statistical Method for Detection Mode MPars Seldom Found in Background – For any given compliance (downgradient) well, the Discharger shall use this data analysis method, jointly, for all constituents on the "scope list" below (or, for each retest sample, the modified scope list of paragraph D.6.b.ii. below).

i. Scope List – Create a current "scope list" showing each detection mode MPar, at that well, that exceeds its MDL in **less than 10 percent** of its background data (see ***Detection Monitoring Specification C.5.f.i***).

ii. Two Triggers – From the scope list made under paragraph C.6.a.i. above, for an initial test [or, for a retest, the modified scope list under paragraph b., below], identify each MPar in the current sample from that well that exceeds its respective MDL or PQL. The Discharger shall conclude that these identified MPars provide a preliminary indication [or, for a retest, provide a measurably significant indication], at that well, of a release if either:

(1) Two or more of the MPars exceed their respective MDL; or
(2) At least one MPar equals or exceeds its respective PQL.

b. Discrete Retest [CCR Title 27 §20415(e)(8)(E)]:

i. In the event that the Discharger concludes (pursuant to paragraph C.7.a.ii. above) that there is a tentative indication of a release, then the Discharger shall immediately notify the Regional Board by phone or e-mail within **3 days** and, within **30 days** of such indication, shall collect two new (retest) samples from the indicating compliance well.

ii. For any given compliance well retest sample the Discharger shall include, in the retest analysis, only the laboratory analytical results for those constituents indicated in that well's original test, under paragraph C.6.a.ii. above, and these indicated constituents shall comprise the well's "modified scope list". As soon as the retest data are available, the Discharger shall apply the same test [under paragraph C.6.a.ii. above, but using this modified scope list] to separately analyze each of the two suites of retest data at that compliance well.

iii. If either (or both) of the retest samples trips either (or both) of the triggers under paragraph C.6.a.ii above, then a measurable

significant increase at that well for the constituent(s) indicated in the validating retest sample(s) has occurred. Furthermore, thereafter, the Discharger shall monitor the indicated constituent(s) in tracking mode (instead of detection mode; see ***Detection Monitoring Specification C.5.e.ii*** above) at that well, shall remove the constituent(s) from the scope list created (under paragraph C.6.a.i. above) for that well, and shall highlight this conclusion and these changes in the next scheduled monitoring report.

7. Frequent Detections of a Synthetic Constituent in a Background Well – Any time an (upgradient or cross-gradient) compliance well exhibits an excessive frequency or proportion of trace-level or numerical concentration data for any MPar (under ***Detection Monitoring Specification C.5 or C.8***) or COC (under ***Detection Monitoring Program B.12 or Detection Monitoring Specification C.4***) that is a non-metallic Appendix II constituent or MTBE, the Discharger shall conduct an investigation under this paragraph. For such a constituent: an "excessive proportion" constitutes a condition, under ***Detection Monitoring Specification C.5.a.i.(2)***, where 10 percent or more of the data from that background well exceeds the MPar's MDL; and an "excessive frequency" constitutes a condition, under ***Detection Monitoring Specification C.8***, in which new data at the background well exceeds the constituent's MDL for two successive samples. Given either condition, the Discharger shall notify the Regional Board **within 3 days** by phone or e-mail and shall, within **180 days** thereafter, submit a report, acceptable to the Regional Board, that examines the possibility that this constituent originated from the WMU (*e.g.*, using a concentration gradient analysis and other methods as appropriate) and proposes appropriate changes to the monitoring program. If, after reviewing this report:

   a. The Regional Board concludes that the evidence indicates the synthetic constituent originated from a source other than the WMU, then the Regional Board may make appropriate changes to the monitoring program; or

   b. The Regional Board is unable to conclude that the evidence indicates the detected synthetic constituent came from a source other than the WMU, then the Discharger shall:

      i. List the constituent as a MPar, if it is not already listed, in the next scheduled monitoring report and shall note this change prominently in the report's summary;

      ii. Include this background well as part of the release, for that MPar and thereafter, shall address this well/MPar pair in tracking mode (*i.e.*, as part of the release), in spite of the well being a

"background" (*i.e.*, upgradient or cross-gradient) well, beginning with the next scheduled monitoring report; and

iii. If there is not at least one other "background" (*i.e.*, upgradient or cross-gradient) well unaffected by this constituent, shall, within **90 days**, install a new upgradient or cross-gradient "background" well in a portion of the aquifer that will provide data representative of background conditions for the WMU's compliance wells.

8. Ongoing Background Well Testing – Although most data analysis will be via intra-well comparisons, the Discharger shall continue to monitor "background" (*i.e.*, upgradient or cross-gradient) wells, for each MPar and COC, each time that MPar or COC is monitored at downgradient wells. Each year that there is new "background" well data for a constituent (*i.e.*, annually for MPars and every five years for non-MPar COCs), the Discharger shall include the new data in the annual monitoring summary report [see CCR Title 27 §20415(e)(14)] as a time-versus-concentration plot for that "background" well and constituent. Any time such a plot (for a given well and constituent) shows two successive data points in excess of the MDL for any non-metallic Appendix II constituent or MTBE that has not already been investigated at that well, under ***Detection Monitoring Specification C.7***, the Discharger shall notify the Regional Board within **3 days** by phone, FAX or e-mail and shall initiate an investigation under ***Detection Monitoring Specification C.7*** within **30 days** of noting this condition.

D. RESPONSE TO A RELEASE

1. If the Discharger determines that there is significant statistical evidence of a release (*i.e.*, the initial statistical comparison or non-statistical comparison indicates, for any Constituent of Concern (COC) or monitoring parameter (MPar), that a release is tentatively identified), the Discharger shall:

   a. Notify the Regional Board within **3 days**, by phone, FAX or e-mail, as to the monitoring point(s) involved, shall provide written notification by certified mail within seven days of such determination, and shall carry out a discrete retest [see ***Detection Monitoring Specification C.5*** (statistical method) or ***C.6*** (non-statistical method) of this M&RP].

   b. Within **30 days**, collect additional sample(s) for the indicated COCs or MPars at each indicating monitoring point [per CCR Title 27 §20420(k)(1)], collecting at least as many samples per suite as were used for the initial test. Re-sampling of the background monitoring points is optional. Samples shall be analyzed using the same analytical methods that produced the original data indicating the tentative evidence of a release. Sample data shall be analyzed using the same

statistical procedure or non-statistical procedure that provided the tentative evidence of a release.

As soon as the data are available, the Discharger shall rerun the statistical or non-statistical method separately upon each suite of retest data. For any indicated monitoring parameter or COC at an affected monitoring point, if the test results of either (or both) of the retest data suites confirm the original indication; the Discharger shall conclude that a release has been discovered.

All retests shall be carried out only for the monitoring point(s) for which a release is tentatively indicated, and only for the COC or MPars, which triggered the indication there, as follows:

i. If an ANOVA method was used for the original data, the retest shall involve only a repeat of the multiple comparison procedure, carried out separately on each of the two new suites of samples collected from the indicating monitoring point.

ii. If the Method of Proportions was used for the original data, the retest shall consist of a full repeat of the statistical test for the indicated constituent or parameter, performed separately on each of the new sample suites from the indicating monitoring point.

iii. If the non-statistical method was used for the original data, the retest shall consist of only those constituents that triggered the retest.

c. If this conclusion is not based upon "direct monitoring" of the COCs, then the Discharger shall, within **30 days**, sample for all COCs at all monitoring points in the affected medium for the WMU, and submit them for laboratory analysis. Within **seven days** of receiving the laboratory analytical results, the Discharger shall notify the Regional Board, by certified mail, of the concentration of all COCs at each monitoring point in the affected medium. Because this scan is not statistically tested against background, only a single datum is required for each COC at each monitoring point.

2. If the Discharger concludes that a release has been discovered:

a. The Discharger shall, within **90 days** of discovering the release, submit an amended Joint Technical Document (*i.e.*, amended Joint Technical Document/Report of Waste Discharge) proposing an Evaluation Monitoring Program, meeting the requirements of CCR Title 27 §20420(k)(5) and §20425, and an Assessment Monitoring Program pursuant to requirements in CFR Title 40 §258.55.

b. The Discharger shall, within **180 days** of discovering the release, submit to the Regional Board a preliminary engineering feasibility study meeting the requirements of CCR Title 27 §20420(k)(6).

c. Within **14 days** of completing an individual step in this section (***Response to Release D.2.a or D.2.b***) the Discharger shall amend the Facility's Operating Record with any results from their evaluation, testing, re-testing, or any technical reports submitted to the Regional Board. Within **seven days** of making an amendment to the Facility's Operating Record pursuant to this section, the Discharger shall also provide written notification to the Regional board indicating that they have amended the Operating Record.

3. If the Discharger determines that there is significant physical evidence of a release, the Discharger shall notify the Regional Board by telephone within 24 hours and by certified mail within seven days. The Discharger shall carry out the requirements of ***Response to Release D.2*** for all potentially affected monitored media.

E. RESPONSE TO DETECTION OF VOLATILE ORGANIC CONSTITUENTS (VOCs) IN BACKGROUND (or any other constituent which is expected to be "non-detectable concentrations" in background and not amenable to statistical analysis)

1. Except as provided in ***Response to Detection of Volatile Organic Constituents E.3*** below, any time the laboratory analysis of a sample from a background monitoring point or detection monitoring point, sampled for VOCs shows either:

a. Two or more VOCs at or above their respective MDLs, or

b. One VOC at or above its respective PQL, then the Discharger shall:

i. Document each affected monitoring point, identify monitoring parameters, and COCs that indicate evidence of a release; and notify the Regional Board by telephone and facsimile within **3 days**.

ii. Follow up with written notification by certified mail within **seven days**.

iii. Obtain two new independent VOC samples from that background monitoring point.

iv. Send the samples for laboratory analysis of all detectable VOCs within **30 days**.

2. If either or both of the new samples validates the presence of VOC(s), using the above procedure, the Discharger shall:

   a. Notify the Regional Board by telephone and facsimile within **3 days**.
   b. Follow up with written notification by certified mail within **seven days**.
   c. Within **180 days** of validation, submit a report that evaluates the possibility that the detected VOC(s) originated from the WMU and proposing appropriate changes to the monitoring program.

3. If the Regional Board determines, after reviewing the report submitted under ***Response to Detection of Volatile Organic Constituents E.2.c*** above, that the VOC(s) detected originated from a source other than the waste management unit, the Regional Board may make appropriate changes to the monitoring program.

4. If the Regional Board determines, after reviewing the report submitted under ***Response to Detection of Volatile Organic Constituents E.2.c*** above, that the detected VOC(s) most likely originated from the WMU, the Discharger shall assume that a release has been detected and shall immediately begin carrying out the applicable general requirements for ***Response to Release D.2*** above).

F. RESPONSE TO LEACHATE SEEP

1. The Discharger shall report by telephone and facsimile within **three days**, the discovery of any previously unreported seepage of liquid waste or water from the WMU. A written report shall be filed with the Regional Board within **seven days**, containing at least the following information:

   a. A map showing the location(s) of seepage;

   b. An estimate of the flow rate of the seepage;

   c. A description of the nature of the discharge (*e.g.*, all pertinent observations and analyses);

   d. Corrective measures implemented and/or proposed for consideration by the Regional Board; and

   e. A workplan for sampling and laboratory analysis and reporting of results for the seepage(s).

G. RELEASE BEYOND THE FACILITY BOUNDARY

1. Pursuant to CFR Title 40 §258.55(g)(1)(iii), any time the Discharger concludes that a release from the WMU has proceeded beyond the facility boundary, the Discharger shall notify all persons who either own or reside upon the land that

directly overlies any part of the plume (affected persons). In addition, the Discharger shall also notify all adjacent property owners and residents located within 2,000 feet of the boundary of the facility (interested persons).

2. Initial notification to interested and/or affected persons shall be accomplished within **14 days** of making this conclusion and shall include a description of the Discharger's current knowledge of the nature and extent of the release.

3. The Discharger shall provide updates to all interested and/or affected persons, including any persons newly affected by a change in the boundary of the release, within **14 days** of concluding there has been any material change in the nature or extent of the release.

4. Each time the Discharger sends a notification to interested and/or affected persons, the Discharger shall provide the Regional Board within **seven days** of sending such notification, with copies of the notification and an updated current mailing list of affected persons.

5. Each time the Discharger sends a notification to interested and/or affected persons and the Regional Board, within **14 days** of sending the notification the Discharger shall amend the Facility's Operating Record to include that notification and any attachments thereto. Within **seven days** of making an amendment to the Facility's Operating Record pursuant to this section, the Discharger shall also provide written notification to the Regional Board indicating that they have amended the Operating Record for the Facility.

H. REPORTS TO BE SUBMITTED TO THE REGIONAL BOARD

All reports shall be submitted electronically no later than one month following the end of their respective Reporting Period. The reports shall be comprised of at least the following in addition to the specific contents listed for each respective report type:

1. Transmittal Letter

   A letter summarizing the essential points shall be submitted with each report. The transmittal letter shall include:

   a. A discussion of any requirement violations found since the last such report was submitted and shall describe actions taken or planned for correcting those violations. If the Discharger has previously submitted a detailed time schedule for correcting said requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred since the last submittal, this shall be stated in the transmittal letter; and

b. A statement certifying that, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct. This statement shall be signed by an individual meeting the requirements contained in **Reporting Requirement I.16** of Order No. R9-2009-004.

2. Semi-Annual Report

The semi-annual report shall contain, but not be limited to, a compliance evaluation summary of the groundwater data obtained. The summary shall include the following information:

a. Monitoring Parameters;
b. Detection limit of monitoring equipment;
c. Measured concentrations of MPars determined from samples collected during the current sampling event;
d. A map (or copy of an aerial photograph) which indicates the locations of observation stations, Monitoring Points, and Compliance Wells, and groundwater flow rate/direction and graphical presentation (*e.g.*, arrow on a map);
e. Monitoring well information, method and time of groundwater level measurement, and a description of the method of purging used both before and after sampling;
f. Sampling information, type of pump used and its vertical placement, detailed description of sampling procedure, QA/QC;
g. Leachate and run-on/off control statement regarding the condition and performance of any leachate monitoring and control facilities and of the run-on/off control facilities;
h. Site inspection reports;
i. Waste placement and type – the quantity and types of wastes discharged and the locations in the WMU where the waste has been placed since submittal of the last monitoring report;
j. Measured concentrations of MPars determined in liquid or vapor samples collected from secondary leak detection system;
k. The total volume of leachate collected each month, reported separately as volume from the Primary LCRS and volume from Secondary LCRS, since the last semiannual monitoring report[1]; and
l. A summary and tabulation of monitoring data including a written technical evaluation of vapor/gas management from the Primary and/or Secondary LCRS.

3. Annual Summary Report

The annual summary report, covering the previous monitoring year, shall contain the following information:

[1] Pursuant to CCR Title 27 §20340(h).

a. For each compliance-monitoring well, the Discharger shall submit a graphical display [per CCR Title 27 §20415(e)(14)] for all data collected within at least the previous five calendar years. Each graph shall plot the concentration of one or more constituents over time for a given monitoring point, at a scale appropriate to show trends or variations in water quality. The graphs shall plot each datum, rather than plotting mean values. For any given constituent or parameter, the scale for background plots shall be the same as that used to plot downgradient data. On the basis of any aberrations noted in the plotted data, the Regional Board may direct the Discharger to carry out a preliminary investigation, the results of which will determine whether or not a release is indicated. The report shall include analysis of trends that have been identified over the last monitoring year, and analysis of any newly identified trends, significant changes in a known trend, or trend reversals identified in the data collected for groundwater, surface water (including seeps and springs), and vadose zone monitoring points (subdrains, lysimeters, or landfill gas wells);

b. A comprehensive discussion of the compliance record, and of any corrective actions taken or planned, which may be needed to bring the Discharger into full compliance with this Order;

c. A written summary of the monitoring results and monitoring system(s), indicating any changes made or observed since the previous annual report;

d. A topographic map at appropriate scale, showing the direction of groundwater flow at the WMU and showing the area in which waste filling has been completed in the previous year;

e. A written summary of monitoring results and monitoring system(s) indicating any changes made or observed since the previous report;

f. A written evaluation of the effectiveness of the leachate control/ monitoring systems, pursuant to CCR Title 27 §20340(b, c, & d). This evaluation may be submitted under separate cover;

g. A copy of the Storm Water Pollution Prevention Plan, or as amended, under a separate cover; and

h. A complete historical tabulation of monitoring data for vapor/gas in the Primary and/or Secondary LCRS, including a written technical evaluation and recommendations for management of vapor/gas from the Primary and/or Secondary LCRS.

4. Mitigation Report

Mitigation monitoring reports must be submitted annually until mitigation has succeeded. Annual monitoring reports must be submitted prior to December 1 of each year. Monitoring reports must include, but not be limited to, the following:

a. Names, qualifications, and affiliations of the persons contributing to the report;
b. Tables presenting the raw data collected in the field as well as analyses of the physical and biological data, including at a minimum;
    i. Topographic complexity characteristics at each mitigation site;
    ii. Upstream and downstream habitat and hydrologic connectivity;
    iii. Source of hydrology;
    iv. Width of native vegetation buffer around the entire mitigation site;
    v. Qualitative and quantitative comparisons of current mitigation conditions with pre-construction conditions and previous mitigation monitoring results;
c. Photodocumentation from established reference points;
d. A Survey report documenting boundaries of mitigation area; and
e. Other items specified in the final *Restoration and Enhancement Plan* prepared for Gregory Canyon Ltd. by URS, dated May 23, 2008.

5. Leachate Report

The Discharger shall submit the leachate monitoring results each **January 31**, taken from the previous October, including an identification of all detected Appendix II constituents and MTBE that are not on the most current version of the COC list for the WMU.

For leachate sampling requiring a retest, a report shall be submitted to the Regional Board by **August 1**. This report must identify all constituents that were detected in both the previous calendar year's October sample and confirmed in the April retest sample, and must permanently add these constituents to the COC list for the WMU. The report shall also include an updated COC list with any Appendix II constituents and MTBE that are newly detected in both the October and April leachate samples.

6. Constituents of Concern Report (every 5 years)

The Discharger shall monitor all constituents of concern (COCs) and submit a COC Report [CCR Title 27 §20420(g)] as follows:

a. The Discharger shall sample all compliance wells for each monitored medium for all COCs every fifth year. The first COC report is due in Spring (after the WMU accepts waste). Subsequent COC reports shall

be submitted **every fifth year thereafter alternately in the Fall (Reporting Period ends September 30) and Spring (Reporting Period ends March 31)**. The COC report may be combined with any Monitoring Report or any Annual Summary Report having a reporting period that ends at the same time. The COC Report shall meet the minimum monitoring report requirements as described in ***Detection Monitoring Program* B.*12;***

b. Analytical results for COCs include the constituents listed in CFR Title 40 Part 258, Appendix II and MTBE. The Discharger shall monitor for all COCs in accordance with this Section, provided that such monitoring need only encompass those COCs that do not also serve as monitoring parameters; and

c. The COC Report shall include a complete tabulation of analytical results, laboratory QA/QC datasheets, a technical discussion of results, and conclusions regarding the integrity of the WMU.

7. The Construction Quality Assurance Plan (Plan), shall be submitted as required by CCR Title 27 §20323.

8. The Final Construction Quality Assurance Report (CQA Final Report) shall be submitted as required by CCR Title 27 §20324. The final CQA Report must provide the Regional Board with acceptable results from all of the following information:

a. All of the CQA information required by CCR Title 27 §20324;

b. The results from field testing [using a combination laboratory and field testing methods, including results from test pads as required by CCR Title 27 §20324(e) through §20324(g), to demonstrate and document that the liner components can be built to comply with the construction, performance standards, and stability requirements in this Order;

c. Final Design Report and Operations Plan containing information specified in CCR Title 27 §21760(a) and §21760(b); and

d. CQA Report Appendices: Contingency Plans

The Discharger must provide its contingency plans for testing and management of all effluents from the following sources:

i. A contingency plan for management of effluents from groundwater seeps from the bedrock unit(s) underlying the liner system.

ii. A contingency plan for testing and management of effluents from the subdrain system (**Landfill Construction Specification E.2** of this Order).

iii. A contingency plan for monitoring, testing and managing "*non-leachate*" effluent (*e.g.*, construction dewatering effluents) from the primary and secondary LCRS (**Landfill Construction Specification E.8** of this Order).

9. A complete copy of the Final Engineering Specifications for the preparation of the WMU foundation/subgrade and construction of all components of the liner system for the Unit.

10. The Discharger shall include a plan for implementation of BMPs for controls of storm water conveyance, soil erosion and sediment discharge in the SWPPP for the Gregory Canyon Landfill.

11. Pursuant to **Provision H.12** of this Order, the Discharger must provide the Regional Board with a "Water Replacement Contingency Plan" to provide replacement water to all private and public well owners, and other parties affected by a release of wastes or waste constituents from the WMU.

12. To ensure compliance with **Provision H.19** of this Order, the Discharger must provide the Regional Board with a contingency plan for completing all required permitting (*e.g.*, NPDES permit), including procedures for collection and analysis of effluent samples from any water treatment system (*e.g.*, the reverse osmosis (RO) treatment system), prior to initiating discharges of treated water to the San Luis Rey River.

13. Pursuant to ***Finding No. 17*** of this Order, the Discharger shall provide the Regional Board with a plan for expanding and improving the coverage of the existing groundwater monitoring network. The required plan shall include the following minimum information:

a. Additional well locations and analyses to improve the groundwater monitoring network for the weathered fractured rock aquifer and meet the minimum performance requirements of CCR Title 27 §20415(b)(1)(A and B), §20415(b)(4); and §20420(a and b).

b. Additional well locations and analyses to improve the groundwater monitoring network for the unweathered fractured rock aquifer and meet the minimum performance requirements of CCR Title 27 §20415(b)(1)(A and B), §20415(b)(4); and §20420(a and b).

c. A plan for conducting an evaluation and reporting results for an analysis of wellhead protection areas[2] for all known existing water supply wells located inside the property boundary and water supply wells located within 2,300 feet of the facility boundary.

d. A plan for performing any additional technical analyses, and/or collecting additional data from field investigations, as may be required for the Discharger to complete the analysis/report required by H.12(c) above, including additional evaluations of site-specific geological, geophysical and/or water quality/geochemical data as necessary. The Discharger shall use this, and other relevant information, to provide the Regional Board with an acceptable technical demonstration that the enhanced groundwater monitoring network will meet all the required performance criteria for a Detection Monitoring Program [see CCR Title 27 §20415(b)(1)(A and B), §20415(b)(4); and §20420(a and b)] for each of the aquifer system (*e.g.*, weathered fractured rock aquifer, unweathered fractured rock aquifer, and alluvial aquifer).

e. Report the results from all tasks required to comply with ***Reports to be Filed with the Regional Board H.12(c) and H.12(d)*** pursuant to the ***J. Reporting Schedule*** of this M&RP.

14. Pursuant to ***Finding No. 18*** of this Order, the Discharger shall provide the Regional Board with a workplan for expanding and improving the performance of the existing surface water monitoring network to comply with applicable requirements of CCR Title 27 §20415(c)(2)(B).

I. RECYCLED WATER MONITORING AND REPORTING

1. The discharger shall submit an annual recycled water report containing the following information:

a. Name of Agency and Facility that supplied the recycled water during the reporting period.

b. The total volume of recycled water supplied during the reporting period.

c. An assessment of compliance of the discharge of recycled water with Discharge Specifications for Specific Types of Waste, C.5.b of Order No. R9-2009-004 by demonstrating that the onsite reverse osmosis

[2] Guidance on performing analysis of Wellhead Protection Areas is published by U.S. Environmental Protection Agency as: "Delineation of Wellhead Protection Areas in Fractured Rocks", publication number EPA 570/9-91-009, dated June 1991; and "Guidelines for Delineation of Wellhead Protection Areas", dated June 1987.

(RO) treatment unit was operating effectively during the reporting period to remove, if necessary, the annual loading of constituents in the recycled water supplied to the landfill that exceeded the annual limitations. The assessment shall apply the following formula, using the monitoring data collected pursuant to Requirement I.2.

$$Q_B C_B \geq Q_R C_R - Q_R C_L \text{ or}$$
$$C_B \geq [Q_R / Q_B] [C_R - C_L]$$

where: Q_R is the volume of recycled water supplied during the year of the reporting period (million gallons/year)
C_L is the limitations specified for the constituents listed in Discharge Specifications for Specific Types of Waste C.5.b.
C_R is concentration of the constituents with prescribed limitations in the recycled water supplied during the reporting period
Q_B is the volume of brine hauled from the site during the reporting period (million gallons/year)
C_B is the concentration of the constituents in the brine hauled from the site during the reporting period

d. The results of the monitoring conducted in accordance with Discharge Specifications for Specific Types of Waste C.5.b with the applicable supporting information as specified under Monitoring Provision A.7.

e. A statement certifying the status of compliance of the discharge with Reports to be Submitted to the Regional Board H.1.b. The statement shall verify that the Discharger has reviewed the requirements, shall identify any issues related to these requirements, and shall discuss how these issues were addressed related to these requirements during the reporting period.

2. For the constituents/parameters listed in the following table and at the frequency specified, the Discharger shall monitor the quantity (Q_R) and quality (C_R) of the recycled water supplied to the site and/or submit monitoring data for the specified constituents that was collected during the reporting period by the Agency supplying the recycled water, and shall monitor the quantity (Q_B) and quality (C_B) of the brine hauled from the site.

CONSTITUENT/ PARAMETER	UNIT	TYPE OF SAMPLE	SAMPLING FREQUENCY	REPORTING FREQUENCY
Flow Volume	Unit	NA[a]	NA[b]	Annually
Total Dissolved Solids	mg/L	Grab	Quarterly[c]	Annually
Nitrate Nitrogen (as N)	mg/L	Grab	Quarterly[c]	Annually
Chloride	mg/L	Grab	Quarterly[c]	Annually
Sulfate (SO_4)	mg/L	Grab	Quarterly[c]	Annually
Iron (Fe)	mg/L	Grab	Quarterly[c]	Annually
Manganese (Mn)	mg/L	Grab	Quarterly[c]	Annually

[a] Flow volume may be measured by number and volume of liquid in tanker trucks
[b] Flow volume shall be recorded monthly and reported annually
[c] Quarterly sampling or at least four samples per year that are scheduled based upon volume of demand.

J. REPORTING SCHEDULE

All technical and monitoring reports shall be submitted electronically in accordance with the following reporting schedule:

Report Type	Report Frequency	Report Period	Report Due	Referemce
Water Quality Monitoring	Semi-Annual	April – September	October 30	H.2
Water Quality Monitoring	Semi-Annual	October – March	April 30	H.2
Water Quality Monitoring	Annual	April – March	April 30	H.3
Storm Water Pollution Prevention Plan	Annual	April – March	April 30	H.3
Mitigation Monitoring	Annual	December - November	December 1	H.4
Leachate Monitoring	Annual	November – October	January 31	B.11.a
Leachate Retest*	Annual	April	August 1	B.11.a.ii, H.5
COC Report[1]	First Five Years	October – March	April 30**	B.12.a
COC Report[1]	Second five years	April – September	October 30***	B.12.a
Final Engineering Specifications	One time with addenda as necessary	-	At least 60-days prior to beginning construction of Unit(s).	H.9
CQA Final Report	One time with addenda as necessary	-	Within 60 days of completing construction of Unit(s)	H.8
Final Engineering Specifications for foundation/subgrade and liner system	As necessary	-	Within 60 days of completing construction of Unit(s)	H.9
CQA Plan	As needed	-	With JTD amendment for new construction of Unit(s)	H.7
Erosion Control Report for Implementation of BMPs	Annual	October 31 to April 30	January 30	H.10
Replacement Water Contingency Plan	One time	-	Within 1 year of completing construction of the waste containment system for WMU Phase 1	H.11
Work plan for Improving Groundwater Detection Monitoring Program	One time	-	Within 90-days of Adoption of this Order	H.13

Report Type	Report Frequency	Report Period	Report Due	Referemce
Work plan for Improving Surface Water Detection Monitoring Program	One time	-	Within 90-days of Adoption of this Order	H.14
Report on Analysis of Wellhead Protection Areas	One time	-	Within 180-days of Adoption of this Order	H.13.c
Contingency Plan for management /and NPDES permitting of discharges of treated water	One time	-	Within 1 year of initiating construction of the waste containment system for Phase 1 of the WMU	H.12
Recycled Water	Annual	April - March	April 30	I.1

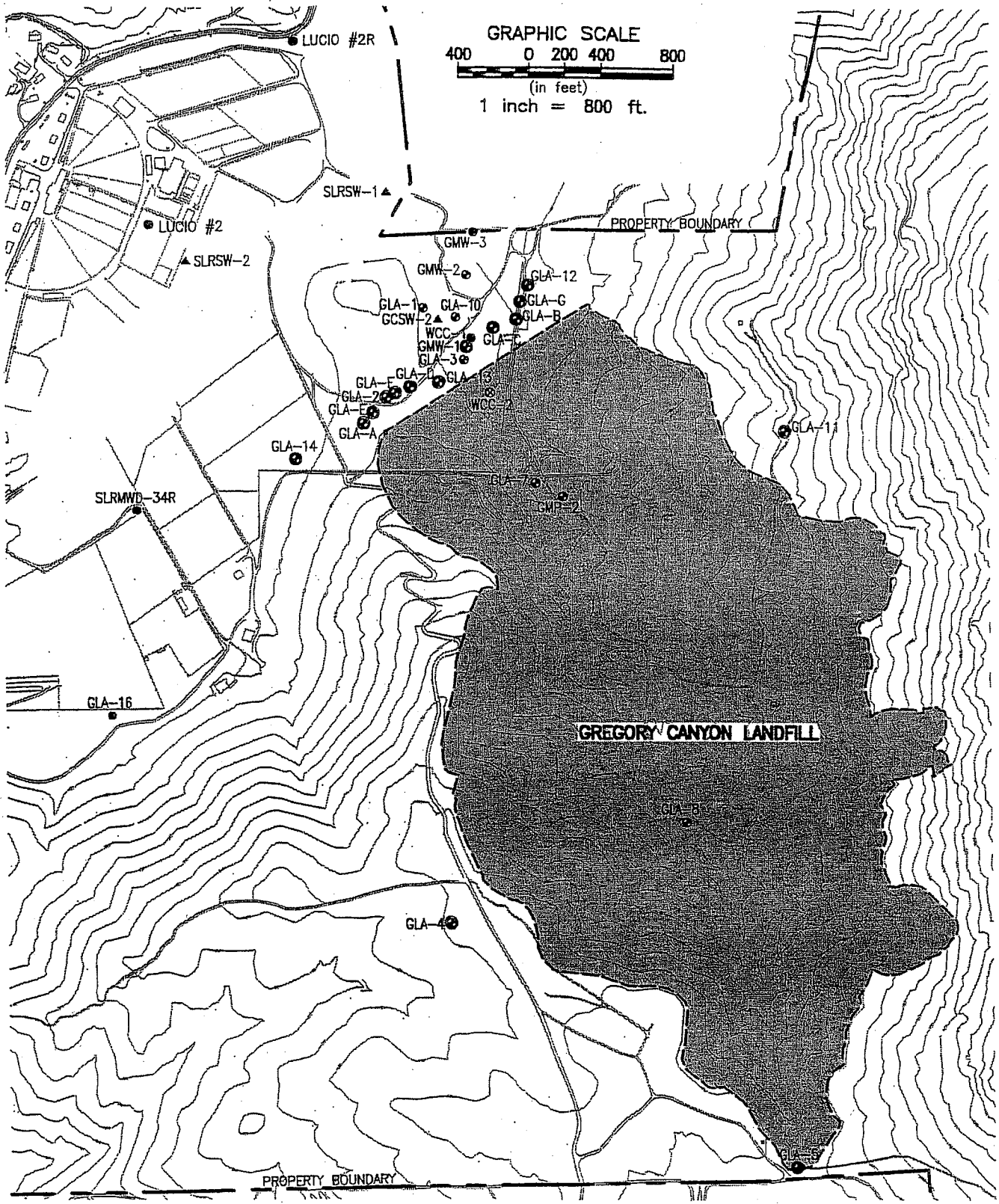
* = If necessary
** = after the WMU begins accepting waste.
*** = five years after the first COC report has been submitted.
[1] COC Reports are due at alternating intervals to account for potential seasonal variations in these data (*i.e.,* every other report is due in April of the reporting year).

Complete paper copies of all required technical and monitoring reports shall be submitted to:

Executive Officer
California Regional Water Quality Control Board
San Diego Region
9174 Sky Park Court, Suite 100
San Diego, CA 92123

Ordered by:

TENTATIVE
JOHN H. ROBERTUS
Executive Officer



EXPLANATION:

- ● ALLUVIAL/COLLUVIAL WELL
- ◒ BEDROCK WELL
- ⊗ WELL SCREENED ACROSS ALLUVIUM AND BEDROCK
- ○ BEDROCK WATER QUALITY MONITORING WELL
- ▲ SURFACE WATER SAMPLING LOCATION

N

Attachment No. 1 to
Monitoring and Reporting
Program No. R9-2009-004